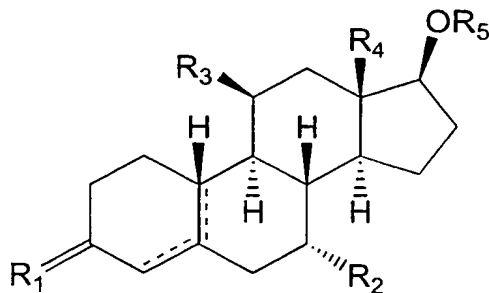


Claims:

1. A compound of the structural formula:



Formula I

wherein

R₁ is O, (H,H), (H,OR), NOR, with R being hydrogen, (C₁₋₆) alkyl, or (C₁₋₆) acyl;

R₂ is (C₂₋₃) alkyl, isopropyl, (C₂₋₃) 1-alkenyl, isopropenyl, 1,2-propadienyl, or (C₂₋₃) 1-alkynyl, each optionally substituted by halogen; or R₂ is cyclopropyl, or cyclopropenyl, each optionally substituted by (C₁₋₂) alkyl or halogen;

R₃ is hydrogen, (C₁₋₂) alkyl, or ethenyl;

R₄ is (C₁₋₂) alkyl;

R₅ is hydrogen, or (C₁₋₁₅) acyl;

and the dotted lines indicate optional bonds;

with the proviso that the compound is not (7 α ,17 β)-7-ethyl-17-hydroxyestr-4-en-3-one (7 α -ethyl-19-nortestosterone) or a carboxylic ester thereof, and is not (7 α ,17 β)-17-(acetyloxy)-7-propylestr-4-en-3-one (7 α -propyl-19-nortestosterone acetate).

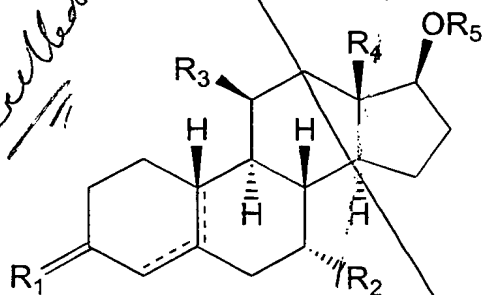
2. A compound of structural formula I for use as a medicine.
3. A compound according to claim 1 or 2, characterised in that R₂ is selected from the group consisting of ethyl, ethenyl, ethynyl, propyl, 1-propenyl, 1-propynyl, 1,2-propadienyl, and cyclopropyl.
4. A compound according to any one of the preceding claims, characterized in that R₁ is oxo, R₃ is hydrogen, and the dotted lines indicate a Δ^4 double bond.

5. A compound according to any one of the preceding claims, characterised in that R_2 is ethyl or ethenyl.

6. A compound according to any one of the preceding claims, characterized in that it is selected from the group consisting of $(7\alpha,17\beta)$ -7,13-Diethyl-17-hydroxygon-4-en-3-one and $(7\alpha,17\beta)$ -7-Ethenyl-13-ethyl-17-hydroxygon-4-en-3-one.

7. The compound $(7\alpha,17\beta)$ -7-ethyl-17-hydroxyestr-4-en-3-one (7α -ethyl-19-nortestosterone) for use as a medicine.

8. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and comprising, as a medicinally active agent, a steroid compound satisfying the general formula I



Formula I

wherein

R_1 is O, (H,H), (H,OR), NOR, with R being hydrogen, (C_{1-6}) alkyl, or (C_{1-6}) acyl;

R_2 is (C_{2-3}) alkyl, isopropyl, (C_{2-3}) 1-alkenyl, isopropenyl, 1,2-propadienyl, or (C_{2-3}) 1-alkynyl, each optionally substituted by halogen; or R_2 is cyclopropyl, or cyclopropenyl, each optionally substituted by (C_{1-2}) alkyl or halogen;

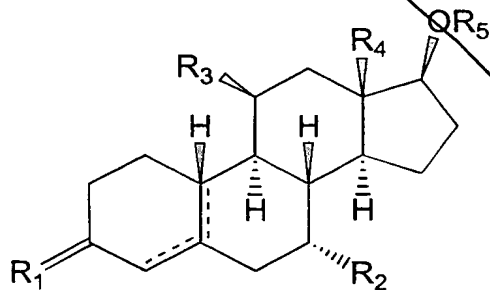
R_3 is hydrogen, $(C_{1/2})$ alkyl, or ethenyl;

R_4 is (C_{1-2}) alkyl;

R_5 is hydrogen, or (C_{1-15}) acyl;

and the dotted lines indicate optional bonds.

9. A pharmaceutical formulation according to claim 8, characterised in that in the steroid compound R_2 is selected from the group consisting of ethyl, ethenyl, ethynyl, propyl, 1-propenyl, 1-propynyl, 1,2-propadienyl, and cyclopropyl.
10. A pharmaceutical formulation according to claim 9, characterised in that the steroid compound is selected from the group consisting of $(7\alpha,17\beta)$ -7-ethyl-17-hydroxyestr-4-en-3-one, $(7\alpha,17\beta)$ -7,13-diethyl-17-hydroxygon-4-en-3-one, and $(7\alpha,17\beta)$ -7-ethenyl-13-ethyl-17-hydroxygon-4-en-3-one.
11. A pharmaceutical formulation according to any one of the claims 8 to 10, characterised in that it is suitable for oral administration.
12. The use of a compound satisfying formula I for the preparation of a medicine for treating androgen insufficiency.
13. A kit for male contraception comprising means for the administration of a progestagen and means for the administration of an androgen, characterised in that the latter means is a pharmaceutical formulation according to any one of claims 8-11.
14. A method of treatment of androgen insufficiency, comprising administering to a patient in need thereof an effective amount of an androgen, characterized in that the androgen is a steroid compound satisfying the general formula I



Formula I

wherein

R_1 is O, (H,H), (H,OR), NOR, with R being hydrogen, (C_{1-6}) alkyl, or (C_{1-6}) acyl;

Sub
CH
cont.
5

~~R₂ is (C₂₋₃) alkyl, isopropyl, (C₂₋₃) 1-alkenyl, isopropenyl, 1,2-propadienyl, or (C₂₋₃) 1-alkynyl, each optionally substituted by halogen; or R₂ is cyclopropyl, or cyclopropenyl, each optionally substituted by (C₁₋₂) alkyl or halogen;~~

~~R₃ is hydrogen, (C₁₋₂) alkyl, or ethenyl;~~

~~R₄ is (C₁₋₂) alkyl;~~

~~R₅ is hydrogen, or (C₁₋₁₅) acyl;~~

~~and the dotted lines indicate optional bonds.~~

Sub
10
AB

15. A method of treatment according to claim 14, characterized in that in the steroid compound R₂ is selected from the group consisting of ethyl, ethenyl, ethynyl, propyl, 1-propenyl, 1-propynyl, 1,2-propadienyl, and cyclopropyl.

15

16. A method of treatment according to claim 15, characterized in that the steroid compound is selected from the group consisting of (7 α ,17 β)-7-ethyl-17-hydroxyestr-4-en-3-one, (7 α ,17 β)-7,13-diethyl-17-hydroxygon-4-en-3-one, and (7 α ,17 β)-7-ethenyl-13-ethyl-17-hydroxygon-4-en-3-one.

20

Add p. 21